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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/646,773  | 08/25/2003  | Masayuki Minamino    | 241735US8           | 1107             |
| 22850   | 7590        | 03/29/2004           | EXAMINER            |                  |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.<br>1940 DUKE STREET<br>ALEXANDRIA, VA 22314 |             |                      | THOMAS, BRANDI N    |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |

2873

DATE MAILED: 03/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/646,773

Applicant(s)

MINAMINO ET AL.

Examiner

Brandi N Thomas

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 0803.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Detailed Action.

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

2. Acknowledgement is made of receipt of Information Disclosure Statement(s) (PTO-1449) filed 8/25/03. An initialed copy is attached to this Office Action.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuhashi et al. (2001/0038498 A1).

Regarding claims 1 and 2, Furuhashi et al. discloses an optical module mounted body comprising: a mounting board (2) having a mounting surface; an optical module (10) placed on the mounting surface; and a securing member (3) configured to secure said optical module (section 0033), said securing member (3) including an upper portion (3a), a plurality of legs (3c) extending from the upper portion (3a) and a plurality of engagement portions (3d) formed at ends

Art Unit: 2873

of the plurality of legs (3c), wherein said optical module (10) is held between said mounting board (2) and said securing member (3) such that the upper portion (3a) of said securing member (3) abuts on an upper surface of said optical module (section 0024), and wherein the plurality of engagement portion (3d) engaging with said mounting board (2) except that it does not show the surface of the mounting board with a plurality of holes for the legs to be inserted. Furuhashi et al. discloses the legs and engaging portions to be secured to the mounting board by screws.

However, it would have been obvious to someone of ordinary skill in the art at the time the invention was made to modify the structure of the mounting to include a plurality of holes and to modify the structure of the engagement portions to be inserted into these plurality of holes for the purpose of each of the structures complete a similar function in fastening the optical module.

Further regarding claim 2, it is obvious to one having ordinary skill in the art at the time the invention was made that the engagement portions would engage with the mounting board on an under surface for the purpose of the engagement portions are inserted through holes on the upper surface the mounting board.

Regarding claim 3, Furuhashi et al. disclose an optical module mounted body wherein said optical module (10) is pressed against the mounting surface (2) by the upper portion (3a) of said securing member (3) (figures 4B and 7).

Regarding claim 4, Furuhashi et al. disclose an optical module mounted body wherein the upper portion (3a) of said securing member (3) is convex towards the upper surface (11c) of said optical module (10) (figure 4B).

Regarding claims 5 and 6, Furuhashi et al. disclose an optical module mounted body wherein said optical module (10) comprises at least one lead pins (11k) for electrical connection

Art Unit: 2873

to external circuits (section 0026) but does not specifically disclose at least one lead pin are soldered to said mounting board. However Furuhashi et al. does disclose a wiring board (11j) connected between the side of the optical module (10) and the lead pins (11k). Therefore it would have obvious to one having ordinary skill in the art at the time the invention was made that the lead pins do not have to be soldered to the mounting board if in fact the lead pins are capable of attaching to the wiring members in a different manner.

Regarding claim 7, Furuhashi et al. discloses an optical module mounted body but does not specifically disclose a heat conducting member interposed between a bottom surface of said optical module and the mounting surface of said mounting board. However Furuhashi et al. does discloses that the mounting board (2) functions as a heat sink (section 0033). Therefore it would have obvious to one having ordinary skill in the art at the time the invention was made to substitute the heat conducting member for the mounting board functioning as a heat sink for the purpose of a more compact optical module device.

Regarding claim 8, Furuhashi et al. discloses an optical module mounted body but does not specifically disclose wherein said mounting board (2) comprises at least one heat conducting member connecting continuously the mounting surface and an undersurface opposite the mounting surface. However Furuhashi et al. does discloses that the mounting board (2) functions as a heat sink (section 0033). Therefore it would have obvious to one having ordinary skill in the art at the time the invention was made to substitute the heat conducting member for the mounting board functioning as a heat sink for the purpose of a more compact optical module device. It is obvious for the heat conducting member to be coplanar with each one of the mounting surface and the undersurface for the purpose of the heat conducting member is included in the mounting

Art Unit: 2873

board, therefore the heat conducting member and the surface of the mounting board would be lying on the same plane.

Regarding claim 9, Furuhashi et al. disclose an optical module mounted body wherein said securing member (3) has two legs (3c) to oppose each other on both lateral sides of said optical module (figure 3).

Regarding claim 10, Furuhashi et al. disclose an optical module mounted body wherein said securing member (3) has two legs (3c) but does not specifically disclose adding another leg. However it would have been obvious to insert an opening in one leg to form two separate legs.

Regarding claim 11, Furuhashi et al. disclose an optical module mounted body wherein said securing member (3) has two legs (3c) on each lateral side of said optical module (figure 6).

Regarding claim 12, Furuhashi et al. disclose an optical module mounted body wherein said optical module (10) comprises a plurality of lead pins (11k) for electrical connection to external circuits (section 0026), the plurality of lead pins (11k) protruding on both lateral sides of said optical module (10) (figure 2); and wherein a part of the plurality of lead pins (11k) protruding on each lateral side of said optical module (10) are received between the two legs (3c) on the same side (figure 4A).

Regarding claim 13, Furuhashi et al. disclose a securing method of an optical module comprising: placing said optical module (10) on a mounting surface of a mounting board (2); placing a securing member (3) over said optical module (10), said securing member (3) including an upper portion (3a) to abut on an upper surface of said optical module (10) (section 0024), a plurality of legs (3c) extending from the upper portion generally alongside of said optical module

Art Unit: 2873

(10), and a plurality of engagement portions (3d) being formed at ends of the plurality of legs (3c); and attaching said securing member (3) to said mounting board (2) except that it does not show the surface of the mounting board with a plurality of holes for the legs to be inserted. Furuhashi et al. discloses the legs and engaging portions to be secured to the mounting board by screws. However, it would have been obvious to someone of ordinary skill in the art at the time the invention was made to modify the structure of the mounting to include a plurality of holes and to modify the structure of the engagement portions to be inserted into these plurality of holes for the purpose of each of the structures complete a similar function in fastening the optical module.

Regarding claim 14, Furuhashi et al. disclose a securing method of an optical module wherein the upper portion (3a) of said securing member (3) is adapted to press the upper surface of said optical module (10) against the mounting surface (figures 4B and 7).

Regarding claim 15, Furuhashi et al. disclose a securing method of an optical module wherein said upper portion (3a) of said securing member (3) is convex towards said upper surface of said optical module (10) (figure 4B).

Regarding claim 16, Furuhashi et al. disclose a securing method of an optical module method according to claim 13, further comprising: inserting a lead pin (11k) of said optical module (10) in a wiring hole (11j) but does not specifically disclose at least one lead pin are soldered to said mounting board. However Furuhashi et al. does disclose a wiring board (11j) connected between the side of the optical module (10) and the lead pins (11k). Therefore it would have obvious to one having ordinary skill in the art at the time the invention was made

Art Unit: 2873

that the lead pins do not have to be soldered to the mounting board if in fact the lead pins are capable of attaching to the wiring members in a different manner.

Regarding claim 17, Furuhashi et al. discloses an optical module mounted body comprising: means for mounting said optical module (10); and means for engaging a securing member (3) with said mounting board (2), said optical module (10) being secured therewith on said mounting board (2) (figure 1).

Regarding claim 18, Furuhashi et al. discloses an optical module mounted body further comprising means for pressing said optical module against the mounting surface (section 0038).

Regarding claim 19, Furuhashi et al. discloses a mounting board comprising: a plate member (2) having a mounting surface and an undersurface opposite the mounting surface; and at least one heat conducting member embedded in said plate member and connecting continuously said mounting surface and said undersurface of said plate member; wherein each of said at least one heat conducting member are exposed on each one of said mounting surface and said undersurface (section 0033).

Regarding claim 20, Furuhashi et al. discloses a mounting board but does not specifically disclose wherein said at least one heat conducting member is coplanar with said mounting surface. However Furuhashi et al. does disclose that the mounting board (2) functions as a heat sink (section 0033). Therefore it would have obvious to one having ordinary skill in the art at the time the invention was made to substitute the heat conducting member for the mounting board functioning as a heat sink for the purpose of a more compact optical module device. It is obvious for the heat conducting member to be coplanar with the mounting surface for the



Art Unit: 2873

purpose of the heat conducting member is included in the mounting board, therefore the heat conducting member and the surface of the mounting board would be lying on the same plane.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Izawa et al. (6608725 B2) discloses an optical module in which an optical device can be mounted and repaired without damaging an electrode on an electronic device side.

Yonemura (US 2002/0149861 A1) discloses an optical module that provides a small-sized optical module having a structure capable of reducing the occurrence of sealing defects in the housing thereof.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandi N Thomas whose telephone number is 571-272-2341. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2873

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BNT



**RICKY MACK  
PRIMARY EXAMINER**